Claims

1. A radiator comprising:

a thermal conductive layer;

a radiation layer powered by an energy source, the radiation layer including at least one radiation element embedded in at least a portion of the thermal conductive layer; and

a thermal insulation layer facing the thermal conductive layer.

2. The radiator of claim 1, wherein:

the thermal conductive layer includes a partially spherical shape defining a focal zone;

the radiation layer includes a partially spherical shape defining a focal zone; and

the focal zone of the thermal conductive layer generally coincides with the focal zone of the radiation layer.

3. The radiator of claim 2, wherein:

the thermal insulation layer includes a partially spherical shape defining a focal zone; and

the focal zone of the thermal insulation layer generally coincides with the focal zone of the radiation layer and the focal zone of the thermal conductive layer.

4. The radiator of claim 2, wherein the thermal insulation layer includes a concave side facing a convex side of the thermal conductive layer, so that the radiation element of the radiation layer increases temperature of the thermal conductive layer and concentrates energy to the focal zone of the radiation layer.

5. The radiator of claim 4 further comprising a plurality of optical fibers having a first end positioned at the focal zone of the radiation layer for receiving the energy, so that the optical fibers transmit the energy received at the first end to a second end of the optical fibers.

6. The radiator of claim 2, wherein the thermal insulation layer includes a convex side facing a concave side of the thermal conductive layer, so that the radiation element of the radiation layer increases temperature of the thermal conductive layer and disperses energy away from the focal zone of the radiation layer.

7. The radiator of claim 1 further comprising a light bulb base coupled to the thermal insulation layer, wherein the base includes positive and negative contactors electrically connected to the radiation layer, and wherein the base is adapted to be received in an electrical lamp socket.

8. The radiator of claim 1, wherein the thermal conductive layer includes a metal oxide material.

9. The radiator of claim 1, wherein the radiation layer is positioned between the thermal insulation layer and the thermal conductive layer.

10. A radiator comprising:

a generally helical dome-shaped radiation member powered by an energy source; and

a generally dome-shaped reflection member including a reflective surface facing the radiation member.

11. The radiator of claim 10, wherein:

the generally helical dome-shaped radiation member defines a focal zone;

the generally dome-shaped reflection member defines a focal zone; and

the focal zone of the radiation member generally coincides with the focal zone of the reflection member.

12. The radiator of claim 10, wherein the reflective surface of the reflection member includes a generally concave shape, and wherein the concave reflective surface of the reflection member faces a convex side of the radiation member, so that the radiation member concentrates energy to the focal zone of the radiation member.

13. The radiator of claim 10, wherein the reflective surface of the reflection member includes a generally convex shape, and wherein the convex reflective surface of the reflection member faces a concave side of the radiation member, so that the radiation member disperses energy away from the focal zone of the radiation member.

14. The radiator of claim 10, wherein the generally helical dome-shaped radiation member includes an electrical coil resistance covered by a thermal conductive material.

15. A radiator used with an astronomic apparatus in Outer Space comprising:

a partially spherical structure member defining a focal zone; and

a radiation layer power by an energy source, the radiation layer connected to the partially spherical structure member, wherein the radiation layer concentrates energy to the focal zone to achieve a temperature differential of the focal zone and an environment of the focal zone and provides a force to the astronomic apparatus and/or an object.

16. The radiator used with an astronomic apparatus in Outer Space of claim 15, wherein:

the partially spherical structure includes thermal conductive layer and a thermal insulation layer;

the thermal insulation layer includes a concave side facing a convex side of the thermal conductive layer; and

the radiation layer includes at least one radiation element embedded in at least a portion of the thermal conductive layer.

17. The radiator used with an astronomic apparatus in Outer Space of claim 15, wherein the radiation layer includes a plurality of infrared radiation emitting devices positioned on the concave side of the partially spherical structure member.

18. A radiator comprising:

a radiation member powered by an energy source; and

a reflection member including an at least partially ring-shaped concave reflective surface facing the radiation member for distributing energy to an at least

partially ring-shaped area.

19. The radiator of claim 18, wherein the radiation member includes an at least partial ring shape.

20. The radiator of claim 18, wherein the radiation member is positioned at a focal zone of the reflective surface.

21. The radiator of claim 18, wherein the radiation member includes an electrical coil resistance covered by a thermal conductive material.

AMENDED CLAIMS

[Received by the International Bureau on 28 December 2004 (28.12.2004); original claims 1-21 unchanged, claims 22-38 added (6 pages)]

1. (Original) A radiator comprising:

a thermal conductive layer;

a radiation layer powered by an energy source, the radiation layer including at least one radiation element embedded in at least a portion of the thermal conductive layer; and

a thermal insulation layer facing the thermal conductive layer.

2. (Original) The radiator of claim 1, wherein:

the thermal conductive layer includes a partially spherical shape defining a focal zone;

the radiation layer includes a partially spherical shape defining a focal zone; and

the focal zone of the thermal conductive layer generally coincides with the focal zone of the radiation layer.

3. (Original) The radiator of claim 2, wherein:

the thermal insulation layer includes a partially spherical shape defining a focal zone; and

the focal zone of the thermal insulation layer generally coincides with the focal zone of the radiation layer and the focal zone of the thermal conductive layer.

4. (Original) The radiator of claim 2, wherein the thermal insulation layer includes a concave side facing a convex side of the thermal conductive layer, so that the radiation element of the radiation layer increases temperature of the thermal conductive layer and concentrates energy to the focal zone of the radiation layer.

5. (Original) The radiator of claim 4 further comprising a plurality of optical fibers having a first end positioned at the focal zone of the radiation layer for receiving the energy, so that the optical fibers transmit the energy received at the first end to a second end of the optical fibers.

6. (Original) The radiator of claim 2, wherein the thermal insulation layer includes a convex side facing a concave side of the thermal conductive layer, so that the radiation element of the radiation layer increases temperature of the thermal conductive layer and disperses energy away from the focal zone of the radiation layer.

7. (Original) The radiator of claim 1 further comprising a light bulb base coupled to the thermal insulation layer, wherein the base includes positive and negative contactors electrically connected to the radiation layer, and wherein the base is adapted to be received in an electrical lamp socket.

8. (Original) The radiator of claim 1, wherein the thermal conductive layer includes a metal oxide material.

9. (Original) The radiator of claim 1, wherein the radiation layer is positioned between the thermal insulation layer and the thermal conductive layer.

10. (Original) A radiator comprising:

a generally helical dome-shaped radiation member powered by an energy source; and

a generally dome-shaped reflection member including a reflective surface facing the radiation member.

11. (Original) The radiator of claim 10, wherein:

the generally helical dome-shaped radiation member defines a focal zone;

the generally dome-shaped reflection member defines a focal zone; and

the focal zone of the radiation member generally coincides with the focal zone of the reflection member.

12. (Original) The radiator of claim 10, wherein the reflective surface of the reflection member includes a generally concave shape, and wherein the concave reflective surface

of the reflection member faces a convex side of the radiation member, so that the radiation member concentrates energy to the focal zone of the radiation member.

13. (Original) The radiator of claim 10, wherein the reflective surface of the reflection member includes a generally convex shape, and wherein the convex reflective surface of the reflection member faces a concave side of the radiation member, so that the radiation member disperses energy away from the focal zone of the radiation member.

14. (Original) The radiator of claim 10, wherein the generally helical dome-shaped radiation member includes an electrical coil resistance covered by a thermal conductive material.

15. (Original) A radiator used with an astronomic apparatus in Outer Space comprising:

a partially spherical structure member defining a focal zone; and

a radiation layer power by an energy source, the radiation layer connected to the partially spherical structure member, wherein the radiation layer concentrates energy to the focal zone to achieve a temperature differential of the focal zone and an environment of the focal zone and provides a force to the astronomic apparatus and/or an object.

16. (Original) The radiator used with an astronomic apparatus in Outer Space of claim 15, wherein:

the partially spherical structure includes thermal conductive layer and a thermal insulation layer;

the thermal insulation layer includes a concave side facing a convex side of the thermal conductive layer; and

the radiation layer includes at least one radiation element embedded in at least a portion of the thermal conductive layer.

17. (Original) The radiator used with an astronomic apparatus in Outer Space of claim 15, wherein the radiation layer includes a plurality of infrared radiation emitting devices positioned on the concave side of the partially spherical structure member.

18. (Original) A radiator comprising:

a radiation member powered by an energy source; and

a reflection member including an at least partially ring-shaped concave reflective surface facing the radiation member for distributing energy to an at least partially ring-shaped area.

19. (Original) The radiator of claim 18, wherein the radiation member includes an at least partial ring shape.

20. (Original) The radiator of claim 18, wherein the radiation member is positioned at a focal zone of the reflective surface.

21. (Original) The radiator of claim 18, wherein the radiation member includes an electrical coil resistance covered by a thermal conductive material.

22. (New) The radiator of claim 18, wherein the reflection member has a generally ring shape.

23. (New) The radiator of claim 18, wherein the radiation member has a generally ring shape.

24. (New) A radiator comprising:

a partially spherical-shaped thermal conductive layer;

a radiation element being in contact with the thermal conductive layer; and

a partially spherical-shaped thermal insulation layer facing the thermal conductive layer.

25. (New) The radiator of claim 24, wherein:

the thermal conductive layer defines a first focal zone;

the thermal insulation layer defines a second focal zone; and

the first focal zone generally coincides with the second focal zone.

26. (New) The radiator of claim 25, wherein the thermal insulation layer includes a concave side facing a convex side of the thermal conductive layer, so that the radiation element increases temperature of the thermal conductive layer and concentrates energy to the focal zone of the radiation layer.

27. (New) The radiator of claim 26 further comprising a plurality of optical fibers having a first end positioned at the focal zone of the radiation layer for receiving the energy, so that the optical fibers transmit the energy received at the first end to a second end of the optical fibers.

28. (New) The radiator of claim 27, wherein the optical fibers include a thermal conductive material.

29. (New) The radiator of claim 27, wherein the optical fibers include a radiation material.

30. (New) The radiator of claim 27, wherein the thermal insulation layer includes a convex side facing a concave side of the thermal conductive layer, so that the radiation element increases temperature of the thermal conductive layer and disperses energy away from the focal zone of the radiation layer.

31. (New) The radiator of claim 24 further comprising a light bulb base coupled to the thermal insulation layer, wherein the base includes positive and negative contactors electrically connected to the radiation element, and wherein the base is adapted to be received in an electrical lamp socket.

32. (New) The radiator of claim 24, wherein the thermal conductive layer includes a metal oxide material.

33. (New) The radiator of claim 24, wherein the radiation element is positioned between the thermal insulation layer and the thermal conductive layer.

34. (New) The radiator of claim 24, wherein the radiation element is partially embedded in the thermal conductive layer.

35. (New) The radiator of claim 24, wherein the radiation element is completely embedded in the thermal conductive layer.

36. (New) A radiator comprising:

an at least partially elliptical or circular reflective surface;

an at least partially elliptical or circular radiation member powered by an energy source, the radiation member generally positioned near or at a focal zone of the concave reflective surface, the reflective surface being concave for distributing energy to an at least partially elliptical or circular irradiated zone.

37. (New) The radiator of claim 36, wherein the radiation member includes an electrical coil resistance covered by a thermal conductive material.

38. (New) The radiator of claim 36, wherein the reflection member has a generally elliptical or circular shape.

39. (New) The radiator of claim 36, wherein the radiation member has a generally elliptical or circular shape.